Sub a2

1. A method of preparing bone marrow stromal cells for implantation for gene therapy, said method comprising:

(a) obtaining bone marrow stromal cells;

(b) culturing the stromal cells to obtain an expanded number of cultured stromal cells;

(c) transfecting cultured stromal cells with an exogenous gene to obtain transfected stromal cells; and

(d) cryopreserving the transfected stromal cells until implantation.

2. The method of claim 1, wherein the bone marrow stromal cells are obtained from bone marrow from a vertebrate.

3. The method of claim 1, wherein the bone marrow stromal cells are obtained from bones removed from a vertebrate.

4. The method of claim 1, wherein the bone marrow stromal cells are mammalian.

5. The method of claim 4, wherein the bone marrow stromal cells are human.

6. The method of claim 4, wherein the bone marrow stromal cells are canine.

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7. The method of claim 1, wherein said exogenous gene encodes a secreted peptide.

8. The method of claim 7, wherein said secreted peptide is a serum protein, a blood clotting factor, a cytokine, a lymphokine, a growth factor, a peptide hormone, a lipid binding protein, a metabolic enzyme, an antibacterial peptide, an antimicrobial peptide, an antifungal peptide, or a neurotransmitter.

9. The method of claim 8, wherein said blood clotting factor is factor VIII or factor IX.

10. The method of claim 1, wherein said exogenous gene encodes a cell surface molecule.

11. The method of claim 10, wherein said cell surface molecule is V-CAM-1, I-CAM-1, N-CAM, or V-LAM.

12. A method of preparing bone marrow stromal cells for implantation for gene therapy, said method comprising:

(a) obtaining bone marrow stromal cells;

(b) culturing the stromal cells to obtain an expanded number of cultured stromal cells;

(c) cryopreserving the cultured stromal cells;

(d) thawing the cryopreserved stromal cells; and

(e) transfecting the thawed stromal cells with an exogenous gene prior to implantation.

13. The method of claim 12, wherein the bone marrow stromal cells are mammalian.

14. The method of claim 12, wherein the bone marrow stromal cells are human.

15. The method of claim 12, wherein the bone marrow stromal cells are canine.

16. The method of claim 12, wherein said exogenous gene encodes a secreted peptide.

17. A method of preparing bone marrow stromal cells for implantation for gene therapy, said method comprising:

(a) obtaining bone marrow cells from bone marrow;

(b) cryopreserving the bone marrow cells;

(c) thawing the cryopreserved bone marrow cells;

(d) culturing the thawed bone marrow cells to obtain an expanded number of cultured stromal cells; and

(e) transfecting the cultured stromal cells with an exogenous gene prior to implantation.

18. The method of claim 17, wherein the bone marrow stromal cells are human.

19. The method of claim 17, wherein the bone marrow stromal cells are canine.

20. The method of claim 17, wherein said exogenous gene encodes a secreted peptide.

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